



Office of Civilian Radioactive Waste Management

QA:N/A

**PROGRAM PHASE-2 WORK BREAKDOWN STRUCTURE
(WBS) AND DICTIONARY**

DOE/RW-0561

Revision 0, ICN 0

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Preparer:

R. W. Minning

Richard W. Minning
Director
Office of Program Management

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Date

Approvals:

Ronald A. Miller

Margaret S. Y. Chu
Director

Office of Civilian Radioactive Waste Management

Nov. 14, 2003

Date

CHANGE HISTORY

Revision Date/ Number	Change Number	Pages Affected	Description of Change
TBD Rev 0 ICN 0	TBD	ALL	Initial Issue. This document supersedes DOE/RW-0325P, <i>Office of Civilian Radioactive Waste Management (OCRWM) Program Work Breakdown Structure (WBS) and Dictionary</i> , Revision 03, DCN 0, September 1999. This document closes out the WBS for Civilian Radioactive Waste Management (CRWM) Program Phase-1 and establishes the Phase-2 WBS.

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FIGURE 1. OCRWM PROGRAM WORK BREAKDOWN STRUCTURE3

1.0 INTRODUCTION

1.1 Purpose and Contents

This document closes out the Civilian Radioactive Waste Management (CRWM) Phase-1 Program Work Breakdown Structure (WBS) and Dictionary and establishes the active Program Phase-2 WBS and Dictionary. Phase-1 of the Office of Civilian Radioactive Waste Management (OCRWM) Program covered all site characterization and pre-licensing activities from the enactment of the Nuclear Waste Policy Act (NWPA) in January 1983 through September 30, 2002. The Repository Design Phase extends from the start of repository preliminary design on October 1, 2002 out to the start of repository construction. Phase-2 includes Repository Design and Repository Construction and extends from October 1, 2002 out to the start of repository operations.

This Program WBS and Dictionary identifies and defines the individual projects and support elements required to achieve the objectives of the CRWM Program. It also provides an ordered framework to plan and control these interrelated work elements. The *Program Phase-2 WBS and Dictionary*:

- Reflects the OCRWM Phase-2 management structure whose core elements are the Yucca Mountain Project, the National Transportation Project, the Nevada Transportation Project, Quality Assurance, and Program Management & Integration.
- Summarizes the total program active Phase-2 work scope and thus provides a clear and direct basis for determining the Total Program Cost.
- Facilitates reporting of the cost, schedule, and technical performance to the Department of Energy (DOE) Secretarial Acquisition Executive.
- Facilitates development of the annual budget requests to the Office of Management and Budget (OMB) and Congress.
- Describes the total work scope over the life cycle of the Program.
- Establishes Level-1 WBS elements that should be extended by the DOE organizational elements down to the DOE control and reporting level, and by the contractor down to the control accounts and work packages.

Technical scope information that corresponds to this WBS can be found in the *Civilian Radioactive Waste Management Requirements Document* (CRD). Cost and schedule information that corresponds to this document can be found in the *Program Phase-2 Cost and Schedule Baseline* document.

Section 2.0 of this document discusses the CRWM Program Total System Life Cycle WBS and Section 3.0 discusses the CRWM Program Phase-2 WBS and Dictionary. Appendix A includes the WBS Index, and Appendix B includes WBS Element Definitions.

1.2 Justification

The Program Phase-2 WBS and Dictionary implements U.S. Department of Energy (DOE) Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*, and DOE Manual 413.3-1, *Project Management for the Acquisition of Capital Assets*.

The Program WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, and (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded by Nuclear Waste Fund or Defense Waste appropriations.

1.3 Maintenance

This document will be maintained by the Director of OCRWM, who is the Chairperson of the Program (Level-1) Change Control Board (CCB), and the information contained herein will kept current to reflect major changes in the Program.

2.0 CRWM PROGRAM TOTAL SYSTEM LIFE CYCLE WBS

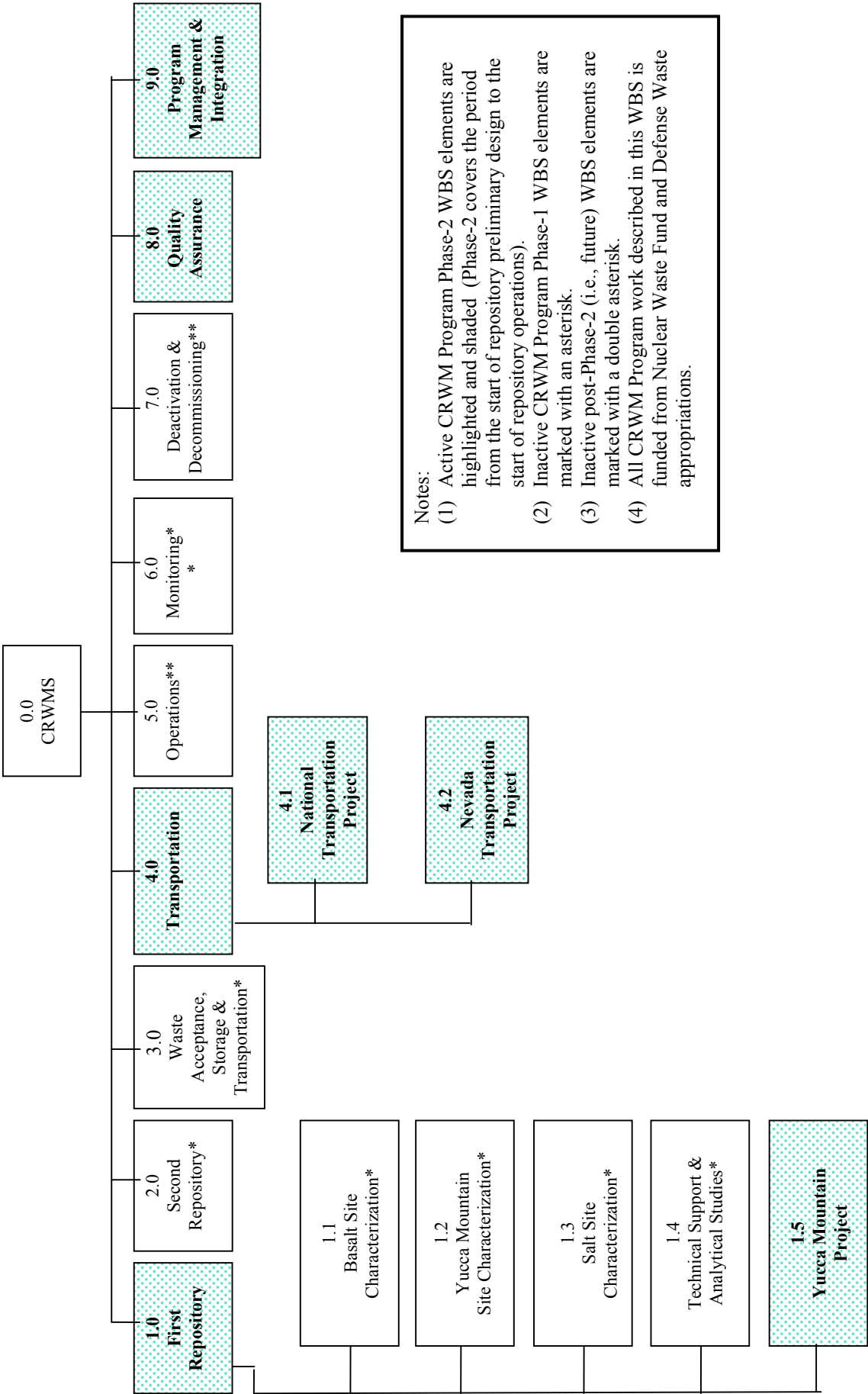
Figure 1 describes the WBS for the CRWM Program Total System Life Cycle, which extends from the inception of the Program after the enactment of the NWPA in January 1983 through the deactivation and decommissioning of the repository.

In the figure, active CRWM Program Phase-2 WBS elements are highlighted and shaded. Inactive CRWM Program Phase-1 WBS elements are marked with an asterisk. Inactive post-Phase-2 (i.e., future) WBS elements are marked with a double asterisk. Together, these make up the CRWM Program Total System Life Cycle.

3.0 CRWM PROGRAM PHASE-2 WBS AND DICTIONARY

As previously stated, Figure 1 shows active CRWM Program Phase-2 WBS elements that are highlighted and shaded. It is these active CRWM Program Phase-2 WBS elements that represent the work scope being baselined by this document.

FIGURE 1. OCRWM PROGRAM WORK BREAKDOWN STRUCTURE



4.0 REFERENCES

- a) LP-PMC-009-OCRWM, *Program Change Control*
- b) DOE/RW-0253, *Program Cost and Schedule Baseline*, Revision 6, DCN 4
- c) DOE/RW-0406, DI: A00000000-00811-1708-00003, *Civilian Radioactive Waste Management Requirements Document (CRD)*
- d) DOE/RW-0562, *Program Phase-2 Cost and Schedule Baseline*
- e) DOE Order 413.3, *Program and Project Management for the Acquisition of Capital Assets*
- f) DOE Manual 413.3-1, *Project Management for the Acquisition of Capital Assets*
- g) Memorandum for the Secretary, *Director of OCRWM requesting approval to Start Yucca Mountain Repository Preliminary Design in Advance of Critical Decision-1*, October 7, 2002

APPENDIX A. WORK BREAKDOWN STRUCTURE INDEX

U.S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART I - INDEX

DOE F1332.10 #
(11-84)

FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)												2. DATE 10/01/2003			3. IDENTIFICATION NUMBER		
4. LINE NO.	5. WBS ELEMENTS											6. PARTICIPANT WBS ELEMENT CODE	7. BUDGET AND REPORTING NO.	8. PHASE	9. OTHER		
	INDENTURE LEVEL									TITLE							
	1	2	3	4	5	6	-	-	-								
1												Civilian Radioactive Waste Management System	0.0				
2		X										Yucca Mountain Project	1.5				
3		X										National Transportation Project	4.1				
4		X										Nevada Transportation Project	4.2				
5	X											Quality Assurance (QA)	8.0				
6	X											Program Management & Integration (PM&I)	9.0				

Title: OCRWM Program Phase-2 Work Breakdown Structure (WBS) and Dictionary

Document No.: DOE/RW-0561

APPENDIX B. WORK BREAKDOWN STRUCTURE DICTIONARY ELEMENT DEFINITIONS

U.S. DEPARTMENT OF ENERGY
**WORK BREAKDOWN STRUCTURE
DICTIONARY**
PART II - ELEMENT DEFINITION

DOE F1332.11 #
(11-84)

FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)		2. DATE 10/01/2003	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE 0.0		5. WBS ELEMENT TITLE Civilian Radioactive Waste Management System	
6. INDEX LINE NO. 1	7. REVISION NO. AND AUTHORIZATION Program Phase-2 WBS and Dictionary, Rev 0, ICN 0		8. DATE 10/01/2003
9. APPROVED CHANGES			
10. SYSTEM DESIGN DESCRIPTION		11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION a. Cost Content Direct labor, procured materials and equipment, subcontractors, and other direct costs (ODCs) and travel. b. Technical Content N/A. c. Work Statement This WBS element includes: Construction of a repository, that is licensed by the Nuclear Regulatory Commission, for the permanent disposal of 70,000 metric tons of heavy metal (MTHM) of high-level radioactive waste and spent nuclear fuel at the Yucca Mountain site. Acquisition of related transportation and waste acceptance systems and services. The WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded with Nuclear Waste Fund & Defense Waste appropriations.			

U.S. DEPARTMENT OF ENERGY
**WORK BREAKDOWN STRUCTURE
DICTIONARY**
PART II - ELEMENT DEFINITION

DOE F1332.11 #
(11-84)

FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)		2. DATE 10/01/2003	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE 1.5		5. WBS ELEMENT TITLE Yucca Mountain Project	
6. INDEX LINE NO. 2	7. REVISION NO. AND AUTHORIZATION Program Phase-2 WBS and Dictionary, Rev 0, ICN 0	8. DATE 10/01/2003	
9. APPROVED CHANGES			
10. SYSTEM DESIGN DESCRIPTION		11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION a. Cost Content Direct labor, procured materials and equipment, subcontractors, and other direct costs (ODCs) and travel. b. Technical Content N/A. c. Work Statement This WBS element includes: Design, licensing, long-lead procurement, construction, and start operations of a nuclear waste repository for the storage of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) during the Project Execution Phase. Work scope to include Repository Preliminary, Final, & As-Built Designs, safety analysis, license application, site operations, engineered barriers, and project support. Project support to include set-asides such as other DOE prime contractors, Financial & Technical Assistance (F&TA), grants, fee, and DOE Contingency. The WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded with Nuclear Waste Fund & Defense Waste appropriations.			

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PART II - ELEMENT DEFINITION

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FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)		2. DATE 10/01/2003	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE 4.1		5. WBS ELEMENT TITLE National Transportation Project	
6. INDEX LINE NO. 3	7. REVISION NO. AND AUTHORIZATION Program Phase-2 WBS and Dictionary, Rev 0, ICN 0	8. DATE 10/01/2003	
9. APPROVED CHANGES			
10. SYSTEM DESIGN DESCRIPTION		11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION a. Cost Content Direct labor, procured materials and equipment, subcontractors, and other direct costs (ODCs) and travel. b. Technical Content N/A. c. Work Statement This WBS element includes: Specification, acquisition, testing, and certification of a truck and rail transportation fleet for spent nuclear fuel (SNF) and high-level radioactive waste (HLW). Work scope to include the acquisition of fleet maintenance infrastructure. The WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded with Nuclear Waste Fund & Defense Waste appropriations.			

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DOE F1332.11 #
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FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)		2. DATE 10/01/2003	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE 4.2		5. WBS ELEMENT TITLE Nevada Transportation Project	
6. INDEX LINE NO. 4	7. REVISION NO. AND AUTHORIZATION Program Phase-2 WBS and Dictionary, Rev 0, ICN 0	8. DATE 10/01/2003	
9. APPROVED CHANGES			
10. SYSTEM DESIGN DESCRIPTION		11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION a. Cost Content Direct labor, procured materials and equipment, subcontractors, and other direct costs (ODCs) and travel. b. Technical Content N/A. c. Work Statement This WBS element includes: Design, acquisition, long-lead procurement, construction, testing, and certification of a Nevada rail line for the transportation of spent nuclear fuel (SNF) and high-level radioactive waste (HLW). Work scope to include National Environmental Policy Act (NEPA) analysis, land acquisition, right-of-ways, and crossings, plus specification, acquisition, and testing of rail line maintenance equipment. The WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded with Nuclear Waste Fund & Defense Waste appropriations.			

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OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)		2. DATE 10/01/2003	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE 8.0		5. WBS ELEMENT TITLE Quality Assurance	
6. INDEX LINE NO. 5	7. REVISION NO. AND AUTHORIZATION Program Phase-2 WBS and Dictionary, Rev 0, ICN 0		8. DATE 10/01/2003
9. APPROVED CHANGES			
10. SYSTEM DESIGN DESCRIPTION		11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION a. Cost Content Direct labor, procured materials and equipment, subcontractors, and other direct costs (ODCs) and travel. b. Technical Content N/A. c. Work Statement This WBS element includes: Contractor support to the Office of Quality Assurance. Support includes developing, maintaining and implementing the Quality Assurance Requirements and Description (QARD) and other approved Quality Assurance programs. The WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded with Nuclear Waste Fund & Defense Waste appropriations.			

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DOE F1332.11 #
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FORM APPROVED
OMB NO. 1901-1400

1. PROJECT TITLE/PARTICIPANT Civilian Radioactive Waste Management System (CRWMS)		2. DATE 10/01/2003	3. IDENTIFICATION NUMBER
4. WBS ELEMENT CODE 9.0		5. WBS ELEMENT TITLE Program Management & Integration (PM&I)	
6. INDEX LINE NO. 6	7. REVISION NO. AND AUTHORIZATION Program Phase-2 WBS and Dictionary, Rev 0, ICN 0		8. DATE 10/01/2003
9. APPROVED CHANGES			
10. SYSTEM DESIGN DESCRIPTION		11. BUDGET AND REPORTING NUMBER	
12. ELEMENT TASK DESCRIPTION a. Cost Content Direct labor, procured materials and equipment, subcontractors, and other direct costs (ODCs) and travel. b. Technical Content N/A. c. Work Statement This WBS element includes: Contractor support to the following DOE offices: (1) Office of Systems Analysis and Strategy Development, (2) Office of Program Management, and (3) Office of Science & Technology and International. Support to the Office of Systems Analysis and Strategy Development includes work scope related to systems engineering, systems analysis, Total System Life Cycle Cost (TSLCC), waste acceptance, regulatory coordination, configuration management, and front office support. Support to the Office of Program Management includes work scope related to baseline management, information management, program management & control, reports & audits, and public information & education. Support to the Office of Science & Technology and International includes work scope related to the investigation of system enhancement & cost reduction opportunities that reduce technical and programmatic risk, and work scope related to international program coordination and technical exchange. The WBS does not include the following three categories: (1) Federal salaries, benefits and related costs, (2) Support contractors funded with Program Direction money, and (3) Work-for-Others not funded with Nuclear Waste Fund & Defense Waste appropriations.			

APPENDIX C. ACRONYMS AND ABBREVIATIONS

CCB	Change Control Board
CD	Critical Decision
CRD	Civilian Radioactive Waste Management Requirements Document
CRWM	Civilian Radioactive Waste Management
CRWMS	Civilian Radioactive Waste Management System
DOE	U.S. Department of Energy
F&TA	Financial & Technical Assistance
FY	Fiscal Year
HLW	High Level Waste
LA	License Application
NRC	Nuclear Regulatory Commission
NWPA	Nuclear Waste Policy Act
OCRWM	Office of Civilian Radioactive Waste Management (DOE)
ODC	Other Direct Cost
OMB	Office of Management and Budget
PM&I	Program Management and Integration
QA	Quality Assurance
QARD	Quality Assurance Requirements and Description
RW	DOE Office of Civilian Radioactive Waste Management
SNF	Spent Nuclear Fuel
TBD	To Be Determined
TSLCC	Total System Life Cycle Cost
WBS	Work Breakdown Structure
YMP	Yucca Mountain Project